



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
1655 Heindon Road  
Arcata, California 95521-4573

In response refer to: WCR-2017-6520

Ms. Patricia Grantham  
Forest Supervisor  
Klamath National Forest  
1711 South Main Street  
Yreka, CA 96097

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens  
Fishery Conservation and Management Act Essential Fish Habitat Response for the  
Lover's Canyon Project.

Dear Ms. Grantham:

On April 6, 2017, NOAA's National Marine Fisheries Service (NMFS) received the final biological assessment (BA) for the Lover's Canyon Project (Project) along with your April 3, 2017, request for a written concurrence with the United States Forest Service's (USFS) determination that the Project is not likely to adversely affect the Southern Oregon / Northern California Coastal (SONCC) Coho salmon (*Oncorhynchus kisutch*) evolutionarily significant unit (ESU) listed under the Endangered Species Act (ESA) as threatened (70 FR 37160; June 28, 2005), or its critical habitat (64 FR 24049; May 5, 1999). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence. NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation. In this case, NMFS also concluded the action would not adversely affect EFH. Thus, consultation under the MSA is not required for this action.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through NMFS' Public Consultation Tracking System (<https://pcts.nmfs.noaa.gov>). A complete record of this consultation is on file at the NMFS West Coast Regions' Arcata, California office.



## Proposed Action

The USFS' Klamath National Forest (KNF) proposes to undertake a landscape scale vegetation treatment project to improve compositional, structural, and functional attributes of forested watersheds situated to the southwest of the Scott River Canyon within the Scott River Ranger District. The legal location of Project units includes: T.44 N, R.11W., Sections 19-21, and 25-36; T.44N., R.12W., Sections 24, 26, and 36; T.43N., R.11W., Sections 2-9; and T.43N., R.12W., Section 1 (Mount Diablo Meridian; 41.382278 Latitude and -123.064319 Longitude, Google Earth). The Project intends to reduce the risk of wildland fires and promote landscape-level fire resiliency, while also providing services including wood products, biodiversity, and beneficial uses of water. To accomplish these goals, the KNF proposes to use both mechanical and manual operations to treat vegetation on a total of 3,460 acres, of which 860 acres will be commercially thinned. The remaining acres will receive pre-commercial thinning, ridgetop fuels treatment, fuel break construction, roadside brushing, fuels breaks, hand piling/pile burning, underburning, lop and scatter, mastication, hazard tree felling, chipping, along with water drafting for dust abatement (Figures 1 and 2 below). With the exception of underburning, which must comply with burn prescriptions, Project activities will occur from April 15 through October 15, but may be restricted at any time during wet weather, as determined by Wet Weather Operation Standards (WWOS, USFS 2002). The Project BA (USFS 2017) describes the following activities/Project elements:

1) **Commercial Harvest** will involve variable density thinning on 860 acres, split between tractor-based logging (approximately 421 acres), skylining (approximately 431 acres), and end lining to roads (eight to nine acres) in both natural stands and plantations. Trees with the best vigor will be retained, with final variable spacing from five to twenty feet. Trees targeted for harvest will be less than 25 inches diameter-at-breast-height (dbh), although larger trees may be cut in the case of disease, over-stocking, crowding of more desirable trees, etc. "Skips" and "gaps" will be created where appropriate to provide for greater stand heterogeneity. "Skips" will receive little to no thinning, while "gaps" will be small openings from 0.25 acre to no greater than 1.25 acres in size. Gaps are intended to retain and encourage hardwood species. The overall Project objective is to create stands that are structurally and species diverse, and to maintain or accelerate growth of trees into larger size classes greater than 25 inches dbh. The desired long-term condition is for such large conifers to comprise 40-60 percent of stand structure, compared to the current condition of 38 percent (USFS 2016). Slash disposal will be by piling/burning, underburning, lop and scatter, mastication, and/or removal to a designated disposal area.

2) **Pre-Commercial/Non-Commercial Thinning** of small diameter conifers up to 10 inches dbh will occur primarily in plantations on approximately 1,103 acres, resulting in residual bole spacing of approximately 26 to 30 feet. Felled/thinned material may be hand-piled and burned, underburned, and/or lopped and scattered, as appropriate. Some mastication of fuels may occur on a subset of pre-commercial thin units (approximately 327 acres) that meet slope, road access, and minimal inclusion of Riparian Reserve (RR) acreage specifications. Masticators will observe variable width equipment exclusion zones within RRs, with masticator arms reaching into exclusion zones to perform treatments while the body of the equipment remains outside such zones.

3) **Fuels Treatments – Ridgetops and Fuel Breaks** will occur on approximately 255 acres

along ridgetops and roads, adjacent to private property, and in the vicinity of Indian Scotty Campground and Lovers Camp Trailhead. Small diameter ( $\leq 10$  inches dbh) conifers, hardwoods, and brush will be manually cut, while ladder fuels will be removed from larger trees. The exception to this small diameter cutting restriction is Lovers Camp itself, where some larger trees and brush may be strategically cut to protect infrastructure, and then left on the ground for woodcutters. Fuels will be hand piled/burned and/or lopped and scattered. Some chipping of fuel may occur.

4) **Fuels Treatment – Underburning** will occur on approximately 2,223 acres, including commercial harvest, pre-commercial thinning, and fuels treatment units, as well as the landscape connecting these units. Overlap with thinning and fuel treatment units within the larger Project underburning footprint is about 981 acres. Ridgetop, slopes, and RRs, including RRs adjacent to fish-occupied streams, may be underburned. Where appropriate, underburning may also be used for meadow enhancement in a few small meadows.

5) **Hazard Tree Removal** will occur at Indian Scotty Campground and Lovers Camp Trailhead, as well as within roadside fuel break areas and up to 200 feet away from each side of Project haul routes. They will be identified and felled in accordance to the Region 5 Hazard Tree Guidelines (USFS 2012), to provide for public and Forest worker safety and future fire suppression efforts. Hazard trees may be removed and made available for local communities, or left on the ground for woodcutters. Most hazard trees felled within RRs will be left in place on the ground, as long as safety and infrastructure will not be compromised. The number of Project hazard trees removed is expected to be small.

6) **Temporary Roads (including stream crossings), Landings, and Water Drafting**, will reopen approximately 1.0 mile of existing roadbed/prism for temporary road use, and approximately 370 feet of new temporary road and/or skid trail construction to access landings. Project temporary roads include two crossings over intermittent, non-fish-occupied stream channels. Approximately 1,350 feet of existing roadbed/prism occurs within RRs. Temporary roads will be blocked and/or hydrologically stabilized, as appropriate, at Project completion.

Approximately 19 new landings will be constructed outside of RRs, while 43 existing landings have been identified for reuse. The few existing landings located within RRs will be further than 50 feet from any break in slope to a stream channel or inner gorge. No landing will be larger than one acre in size. Wherever possible, skyline landings will use road prisms. All landings will be configured for long-term drainage and hydrologically stability after their use. Any additional new/existing landings that may be necessary will be subject to the same restrictions/standards associated with all Project landings.

The Lover's Canyon Project has identified water drafting for dust abatement to occur up to eight established locations: Canyon Creek – County Road 6E003 bridge crossing; Boulder Creek – Forest Road 44N45 and Forest Road 44N53Y bridge crossings; SF Kelsey Creek – Forest Road 44N44 and Forest Road 44N45 low-water crossings; Second Valley Creek – Forest Road 44N45 low-water crossing; Canyon Creek tributary – Forest Road 43N45 culvert crossing; and Canyon Creek tributary – Forest Road 44N45 culvert crossing. Additional water drafting sites may be designated during Project implementation, based upon need and with the approval of a KNF fish biologist. When occurring within the range of anadromy (*i.e.*, Canyon Creek – County Road 6E003 bridge crossing) Project water drafting will be implemented according to NMFS Water Drafting Specifications (NOAA 2001).

5) **Legacy (Sediment) Site Treatments** are proposed to reduce sediment mobilization and delivery along USFS system roads and at stream crossings at 53 identified locations, 45 of which pose a low to medium risk of sediment mobilization while eight others pose a high risk. Legacy site treatments include: culvert upgrades to accommodate 100-year peak flows; slide stabilization that may include use of retaining walls; construction of dips and waterbars; reduction of fill volumes at road-stream crossings; ditch and berm elimination along with road outsloping; and road rocking and grading. Project Legacy sites will be scheduled for treatment/remediation via coordination with the North Coast Water Quality Control Board, and completed as staff and funding resources permit.

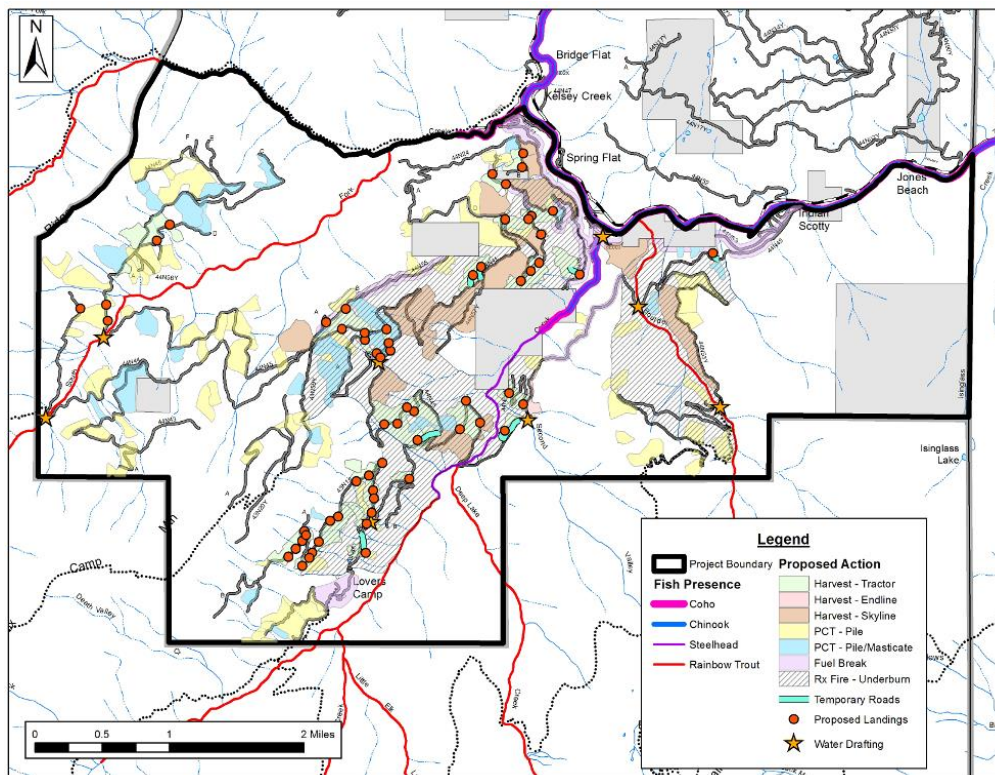


Figure 1. Salmonid habitat present within the Lover's Canyon Project area. Map includes all proposed Project elements, except legacy site treatments

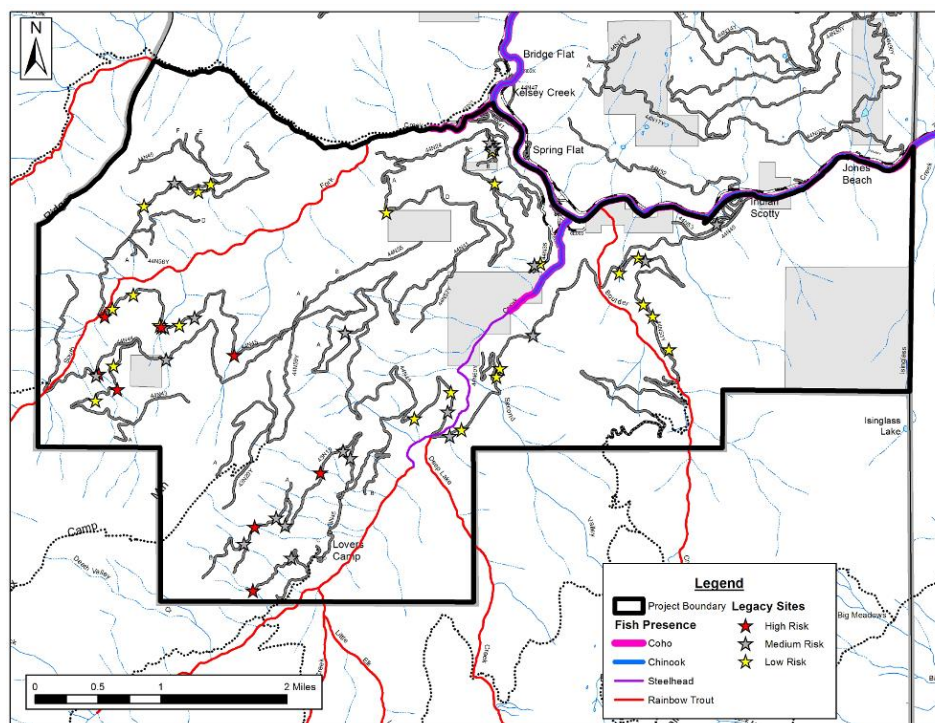


Figure 2. Legacy road treatments (stars) proposed within Lover's Canyon Project area

## Project Resource Protection Measures

Project design features (PDFs), Best management practices (BMPs, USFS 2017), and WWOS (USFS 2002), collectively called resource protection measures, serve to minimize impacts to aquatic resources and organisms. The Project BA (USFS 2017) clarifies how these resource protection measures are designed to avoid and/or minimize potential environmental impacts, and to ensure that both singly and cumulatively they reduce anticipated Project effects on SONCC coho salmon and its critical habitat. For example, equipment exclusion zones and no treatment buffer setback distances within RRs (USFS 2017, Appendix B, Table B-2) are based upon fish presence/absence in the stream reach associated with a Project treatment unit, its hillslope location, and whether it is a natural stand or plantation.

Project BMPs (USFS 2017, Appendix E) have been found to be effective in protecting water quality from impacts caused non-point sources of pollution associated with KNF management activities similar to the Project.

The Project will take place during the Normal Operating Season (NOS) from April 15 to October 15, and in accordance with Forest Service WWOS (USFS 2002). Project commercial harvest, thinning, and manual fuels treatment activities may require up to ten years to complete (*i.e.*, 2027), because fuels treatments like pile burning and underburning may be constrained by burn prescription, weather conditions, and/or staff availability. Project activities may also occur during periods of dry weather outside of the NOS, and be restricted during periods of wet

weather during the NOS: both determined by compliance with WWOS (USFS 2002). The exception is for underburning which is, as stated above, dependent on weather and staff availability. Project activities occurring outside of the defined NOS must receive Line Officer approval, and NMFS must be notified and provided with an extended weather forecast for the proposed work interval and a description of the work to be done.

## **Background and Action Area**

The Project action area, defined in 50 CFR 402.02 as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action,” is located within seven 7<sup>th</sup>-field subwatersheds, which in turn are located within the Lower Scott River 5<sup>th</sup>-field watershed on the Scott River Ranger District (USFS 2017). Specific subdrainages where Project activities will occur include Boulder Creek, Canyon Creek, and Kelsey Creek. The action area also includes riparian and stream channel habitat, including thermal refugia within the lower Scott River Canyon, extending approximately 12 miles downstream to the confluence of the Scott and Klamath Rivers, where no measurable effects from the Project are expected to occur.

## **Status of SONCC Coho Salmon Population in the Action Area**

Large declines in salmon populations have been documented during the mid-twentieth century, due to mining, timber harvest, overfishing, and the habitat degradation resulting from those activities (Weitkamp et al. 1995). The SONCC Coho Salmon Recovery Plan (NOAA 2014) has made the determination that the SONCC coho salmon Scott River population is a core, functionally independent population with a moderate risk of becoming extinct in the next 100 years within the Project action area.

Adult and juvenile coho salmon are likely to be seasonally present in the lower reaches of the Scott, Canyon, and Kelsey creeks in the action area. The patterns of salmonid activity in the action area are as follows:

- Adult coho salmon are likely to be present in action area creeks from November to January;
- Portions of the action area provide potential spawning habitat for coho salmon, including lower Canyon Creek, lower Kelsey Creek, and portions of the Canyon Reach of the Scott River; and
- Juvenile coho salmon may rear in the action area year round.

Designated critical habitat for SONCC coho salmon is based on physical and biological features essential to the conservation of a listed species. In the action area, the physical and biological features of critical habitat essential for SONCC coho salmon most likely to be affected by the Project include:

- *Spawning, incubation, and emergence* at sites provide substrate suitable for adult spawning, and that sustain egg incubation and survival to emergence;



- *Freshwater rearing sites* with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams, and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks; and
- *freshwater migration corridors* free of obstruction and excessive predation, with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

### **Interrelated and Interdependent Actions**

As defined in 50 CFR 402.02, interrelated actions are part of a larger action and depend on the larger action for their justification. The Project will treat Legacy sediment sites within the action area, which will serve to maintain treated portions of the Klamath National Forest's road system. This project is not part of a larger action and does not depend on any larger action for its justification; therefore, this project is not interrelated with any other projects.

As defined in 50 CFR 402.02, interdependent actions have no independent utility apart from the action under consideration. The Project has independent utility, as there are no related future projects under consideration. Although other silvicultural and fuels treatment projects may be planned on an ongoing basis, no actions that are part of and dependent on this proposed action have been identified. Whether or not the Project proceeds would not influence on any other known projects.

### **Action Agency's Effects Determination**

The USFS determined that the Project may affect, but is not likely to adversely affect the SONCC coho salmon evolutionarily significant unit (ESU, 70 FR 37160, June 28, 2005), or its designated critical habitat (64 FR 24049, May 5, 1999).

### **Action Agency's Direct Effects Determination**

The potential for direct effects to SONCC coho salmon and its designated critical habitat is associated with actions that occur within active stream channels where SONCC coho salmon are present. The only Project element proposed within such critical habitat is water drafting at one established location in lower Canyon Creek at the County Road 6E003 bridge crossing (USFS 2017), posing a risk of impingement and/or entrainment. All Project water drafting within anadromous waters, including lower Canyon Creek, will use NMFS-approved screens, and will comply with all NMFS Water Drafting Specifications (NOAA 2001) and PDFs/BMPs (USFS 2017, Appendix E). All other Project work, with the exception of manually-treated fuel breaks (including some chipping) and underburning, will be located at least 300 feet upslope from any anadromous fish and their habitat.

All instream road/stream crossing Legacy treatment work will not occur where juvenile SONCC coho salmon are present, but will be located at least 500 feet from SONCC coho salmon designated critical habitat (i.e., Isenglass Creek-Scott River 7<sup>th</sup> field subwatershed). Based on this physical separation of Project instream road/stream crossing work from SONCC coho salmon, as well as the capacity of the intervening stream/riparian habitat to dilute/buffer any mobilized sediment, the USFS determined that these activities will not adversely affect SONCC coho salmon.

### **Action Agency's Indirect Effects Determination**

The KNF (2017) concluded that SONCC coho salmon have the potential to occur in the action area and may be exposed to effects from Project activities. Additionally, the physical and biological features of SONCC coho salmon critical habitat potentially affected include impacts to water quality, surface flow, juvenile salmonid holding and foraging habitat, and riparian vegetation.

The KNF (2017) stated that to minimize impacts to fish species, designated critical habitat, and EFH, only Project water drafting would occur within the wetted channel of SONCC coho salmon critical habitat, that vegetation impacts would be minimized, and that PDFs/BMPs would minimize discharge of sediment and/or contaminants into downslope/downstream creeks.

The Project effects analysis provided the following: a summary statement for each Project Element; combined Project Element summaries for each habitat indicator to yield a single indicator summary; evaluated watershed Condition Indicators for potential effects; and answered the questions in the Project effects determination key for all indicator summaries.

The USFS used field review of habitat suitability, professional judgment, fish survey records, and California Department of Fish and Wildlife data to determine that insignificant short-term Project impacts would be expected to occur, but that there would be a long-term improvement in habitat function resulting from legacy site rehabilitation, fuels treatments, and planting. The USFS also determined that the Project would not affect EFH for Pacific salmon.

### **Consultation History**

ESA-listed species managed by NMFS for the West Coast Region were found at: [http://www.westcoast.fisheries.noaa.gov/protected\\_species/species\\_list/species\\_lists.html](http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html). This was used as the basis for determining which species were to be considered in this biological assessment. The Project was discussed with a NMFS representative Don Flickinger at Level 1 meetings on January 9, 2014, April 23, 2014, September 23, 2014, January 7, 2015, and September 9, 2015. A Project Initiation Form was sent to Don Flickinger on May 18, 2016, thereby providing NMFS with a project description, map, and anticipated timeline for BA submission. A draft BA was sent to Don Flickinger on November 17, 2016. Comments were received on December 27, 2016 and edits subsequently completed, which were sent to D. Flickinger on January 30, 2017. Don Flickinger provided additional comments on the revised BA on February 17, 2017 and March 2, 2017. The BA was finalized on March 6, 2017.



## **ENDANGERED SPECIES ACT**

### **Effects of the Action**

Under the ESA, “effects of the action” means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

Factors considered in the analysis include description of the spatial extent, duration, and if necessary, magnitude and frequency of occurrence of direct and indirect effects and potential stressors on individual fish and critical habitat in the action area. The effects of the proposed action to individual fish describes the conditions that cause impacts to individual fish and quantifies, when possible, the amount and extent of expected impacts. The impacts of the proposed action to critical habitat describes the response of the habitat elements to the potential stressors and any impacts to the function of physical and biological features of the critical habitat in the action area.

### **Direct Effects to SONCC Coho Salmon Individuals**

SONCC coho salmon juveniles are likely to be present in the action area during Project implementation, primarily in cool water associated with accessible reaches of tributaries to the Scott River. Direct effects to individual SONCC coho salmon resulting from Project activities are limited to Project water drafting, and may include: increased stress from noise and vibration, sediment-related gill abrasion and respiratory distress from increased turbidity, temporary reduction in available habitat, increased metabolic stress and exposure to predation from forced relocation to reaches they would otherwise avoid, and impingement and/or entrainment associated with water drafting. Potential indirect effects to SONCC coho salmon critical habitat are addressed in the Effects to Critical Habitat section below.

One of the eight planned Project water drafting sites is likely to be located in SONCC coho salmon critical habitat where juveniles may be present. At this site, and at any site within the range of anadromy, water drafting will comply with all NMFS Water Drafting Specifications and NOAA-compliant fish exclusion screens will be used (NOAA 2001).

#### *1) Noise and Vibration*

In Lower Canyon Creek, the single Project water drafting sites where SONCC coho salmon may be present during water drafting, fish are likely to exhibit avoidance behavior caused by the noise and vibration associated with screened intake placement/removal and pump operation. This avoidance response is similar to that caused by natural disturbance (*e.g.*, vegetation and rock movement, predator presence, etc.). Observation of salmonids during water drafting studies

using NMFS-compliant fish exclusion screens demonstrate that such avoidance behavior lasts only a few seconds during screen placement and at the start of pump operation: an insignificant impact. Juvenile salmonids quickly resume normal swimming and foraging behavior in proximity to fish screen surfaces while drafting operations proceed. Salmonids again exhibit insignificant amount of avoidance behavior for a few seconds when water drafting screens are removed from streams, quickly resuming normal swimming and foraging behavior thereafter (NOAA-USFS 2009, USFS 2013, Image 1).



Image 1. SONCC coho salmon exhibiting normal swimming behavior adjacent to fish exclusion screen during water drafting operations, Canyon Creek, Scott River Canyon, September 2009.

Other project activities that occur outside of/upstream from SONCC coho salmon critical habitat will be far enough away to cause no more than negligible impacts to the physical and biological features of such critical

## *2) Increased Turbidity*

Individual SONCC coho salmon in Lower Canyon Creek may be exposed to small, brief suspended sediment plumes in the water column at the water drafting site during hand placement and removal of fish exclusion screens and hoses. Exposure to suspended sediments in the water column has the potential to reduce dissolved oxygen levels, and to foul or abrade fish gill structures. These conditions can reduce respiration capacity in fish, elevating stress levels. The likelihood of suspended sediment being present in sufficient concentration or long enough to cause significant effects on individual SONCC coho salmon is extremely unlikely. This is because any sediment mobilized by hand placement and removal of fish exclusion screens and hoses will be localized, small, and will return to ambient conditions in a few seconds. Therefore,

potential effects to individual SONCC coho salmon from elevated turbidity associated with Project water drafting will be insignificant.

### *3) Reduced Water Quality*

Removal of riparian vegetation providing effective canopy shade over stream channels is expected to be confined to brushing out single-lane water drafting access ways at eight sites, and will therefore be localized and small in scale, resulting in insignificant effects to water temperature. This includes any Project water drafting locations where SONCC coho salmon may be present, in Lower Canyon Creek.

### *4) Impingement/Entrainment of Individual Fish*

Project water drafting activities have the potential to impinge or entrain juvenile SONCC coho salmon when occurring within its designated critical habitat. Such water drafting will utilize approved fish exclusion screens as outlined in NMFS Water Drafting Specifications (NMFS 2001). Following these NMFS Water Drafting Specifications (2001), including having sufficiently large screen surface areas and sufficiently small screen mesh openings, will render the potential of impinging or entraining juvenile SONCC coho salmon during Project water drafting insignificantly small.

## **Effects to Critical Habitat**

The Federal Register, Volume 64, No. 86, on page 24049 (May 5, 1999) defines critical habitat for SONCC coho salmon ESUs as the area which “encompasses accessible reaches of all rivers (including estuarine areas and tributaries) between the Mattole River in California, and the Elk River in Oregon, inclusive.”

The designation(s) of critical habitat for (species) use(s) the term primary constituent element (PCE) or essential features. The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). This shift in terminology does not change the approach used in conducting our analysis, whether the original designation identified primary constituent elements, physical or biological features, or essential features. In this letter of concurrence, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat. PBFs for the critical habitat in the Project action area, specifically the lower reaches of Canyon and Kelsey Creeks and portions of the Scott River Canyon down to its confluence with the Klamath River, include migratory corridors for juvenile and adult SONCC coho salmon, non-natal juvenile rearing, and spawning habitat.

The effects of the proposed action on critical habitat may include:

- (1) decreased habitat availability at the site level and immediately downstream from tributary water drafting sites, coincident with drafting activities;

- (2) increased water temperatures due to loss of stream shading at the site level from hazard tree felling and brushing out of drafting access points, as well as small and fleeting increases in water temperatures downstream from tributary water drafting sites during active pumping;
- (3) increased turbidity and/or sediment mobilization from soil-disturbing Project activities (e.g., skidding, yarding, hauling, and water drafting activities), and Legacy site repair at 53 sites, all of which will be located outside of anadromous salmonid habitat; and
- (4) decreased large woody debris recruitment/availability associated with hazard tree removal.

The design of Project treatment units and resource protection measures (including PDFs, BMPs, and WWOS) serve both singly, and cumulatively to preserve significant buffers between Project activities and riparian habitat (excepting road/stream crossing upgrade work and water drafting), including a two site tree height RR management zone (340 feet) that mediates Project commercial harvest units near fish-bearing streams, including SONCC coho salmon critical habitat.

#### *1) Decreased Habitat Availability*

During Project water drafting at water drafting sites within SONCC coho salmon critical habitat, there could be rapid changes or sustained reductions in surface flow, resulting in reduced habitat availability for SONCC coho salmon. In order to reduce or eliminate these potential effects, the USFS will follow BMP 2.5, Water Source Development and Utilization, which provides direction specific to water drafting (USFS 2017, USFS 2011). This direction ensures that water drafting may only occur when bypass stream flows can be sustained at 1.5 cubic feet per second for fish bearing streams. Additionally, when occurring in SONCC coho salmon critical habitat, Project water drafting will comply with NOAA Water Drafting Specifications (2001). These specifications require that drafting pumping rates do not exceed ten percent of the stream flow, that drafting does not result in obvious draw-downs of either upstream or downstream pools, and that there are only short-term, localized, insignificant decreases in SONCC coho salmon critical habitat availability.

#### *2) Increase in Water Temperatures*

Project hazard tree felling will occur adjacent to Indian Scotty Campground and Lovers Camp Trailhead, as well as within roadside fuelbreak areas up to 200 feet away from each side of roads. Hazard tree felling within 200 feet of SONCC coho salmon critical habitat may cause some localized reduction in effective canopy shade over stream channels, thereby increasing stream water temperature. However, Project hazard tree felling will comply with Region 5 Hazard Tree Guidelines (USFS 2012), occur only occasionally along roadways, and where roads and RRs intersect hazard trees that are felled will be left in place on the ground as long as safety and infrastructure will not be compromised (USFS 2017). This dispersed, low impact, and limited felling may result in small, localized increases in solar radiation onto waterways, but it will not cause detectable changes in stream water temperature, either at the site or downstream. In summary, hazard tree felling is not expected to result in detectable increases in adjacent stream water temperatures, including SONCC coho salmon critical habitat.

Project water drafting from designated upland tributary drafting sites may reduce instream flows, potentially resulting in increased water temperatures at and immediately downstream from tributary drafting sites during active pumping. However, all Project water drafting within SONCC coho salmon critical habitat will comply with NOAA Water Drafting Specifications (2001), and pumping rates will not exceed ten percent of the stream flow nor result in obvious draw-downs of either upstream or downstream pools. The time required to complete a water drafting event is mediated by the time needed to fill an engine or water tender. At the maximum pumping rate permitted by NMFS Water Drafting Specifications (350 gallons per minute, 2001), a 2,000 gallon tanker will fill in under 6 minutes, and a 5,000 gallon tanker will fill in less than 15 minutes (Meneks 2014). The brevity of episodic drafting will, therefore, not result in thermal loading of the waterway either from direct sunlight or high ambient temperatures. The same requirements apply to water drafting from larger streams and rivers, where effects from water drafting on water temperature are expected to be discountable. Therefore, Project water drafting is expected to result on no more than short-term, localized, insignificant increases in water temperature, including in SONCC coho salmon critical habitat.

In providing access to water drafting points, removal of riparian vegetation providing effective canopy shade over stream channels is expected to be confined to brushing out a single-lane water drafting access way at one site, therefore, resulting in insignificant effects to water temperature where SONCC coho salmon may be present.

### *3) Increased Turbidity and Sediment Mobilization*

Due to the Project's proximity to Canyon and Kelsey creeks, and the lower Scott River, Project-related soil disturbance and water drafting have the potential to cause both storm water and non-storm water discharges to those receiving waters, both during and after the Project.

As a result of the proposed project, soil erosion is likely, and small amounts of mobilized sediment may enter watercourses in the action area. The input of sediment may negatively affect the quality and functionality of substrate, water quality, and food abundance in designated critical habitat. However, Project impacts are expected to be minimized by avoidance measures, PDFs, and BMPs (USFS 2017) that include: 1) avoidance of in-channel activity except for water drafting and Legacy site treatment; 2) the setback distances from stream channels provided by RRs (equipment exclusion zones of at least 170 feet from fish-bearing streams); 3) protection of unstable areas via ground-based equipment exclusion from active landslides, inner gorge, landslide toe zones, and steep-dissected granitic ground; and 4) the Project timing window (April 15–October 15) and WWOS (USFS 2002) that are designed to minimize erosion sediment mobilization in the action area.

Airborne dust associated with Project ground-based, skyline, helicopter logging and log hauling activities may increase suspended sediment (*i.e.*, turbidity) in streams. Turbidity may also result from soil disturbance associated with temporary road and road/stream crossing (re)construction, landing (re)construction and use, and Legacy site treatments. Elevated turbidity may cause a decrease in dissolved oxygen levels (*e.g.*, mineral oxidation, detritus decomposition), and increased suspended sediment in the water column. Fine sediment precipitating onto streambed surfaces may fill spaces between larger particles, temporarily reducing the quality of salmonid

spawning habitat. Project-generated airborne dust, associated primarily with mechanized equipment operation listed above, will be minimized by dust abatement along roads used during Project implementation. Proposed Project dust abatement has demonstrated success in minimizing airborne dust during previous, similar projects, and is expected to result in only localized, fleeting, insignificant increases in suspended sediment and fine sediment precipitation onto Project streambed surfaces.

NMFS has observational data from a mid-Klamath River tributary to estimate the downstream distance where Project-related sediment disperses: stream dewatering and rewatering at a Caltrans double culvert replacement project on lower O'Neil Creek (B. Humphrey 2014). Caltrans monitored turbidity on November 10 and 11, 2006, while the final culvert on O'Neil Creek was removed and water was returned to the newly constructed streambed. The reported maximum value of 9.97 mg/L nephelometric turbidity units (NTUs) was well below the 27 mg/L NTUs suspended sediment concentration believed to affect the ability of juvenile salmonids to forage for food (Klein 2003). The temporary small amount of suspended sediment mobilized from the crossing site became diluted to undetectable levels and dispersed about 300 feet downstream, before entering the Klamath River. NMFS also uses a study by Royer et al. (1999) as a relevant analogue to estimate mobilized sediment precipitation/dispersal. Royer et al. determined that suspended sediments in the water column dropped within 320 meters (1,050 feet) of suction dredging activity using a ten-inch dredge, to levels similar to those upstream of the dredge. Though river conditions in the Royer et al. (1999) study are markedly different than the tributaries in the Project area, NMFS believes that this study provides a highly conservative approximation of sediment transport. Flows in tributary streams within the Project area during Project implementation are smaller than Forty-mile River, which was used in Royer et al. study. Any suspended sediment will quickly and locally settle to tributary stream bottoms (*i.e.*, within 300 feet of any instream activities) before they can significantly affect SONCC coho salmon critical habitat. Additionally, the sediment plume from a ten-inch suction dredge in high flow conditions would be orders of magnitude larger and last longer than potential plumes resulting from Project instream and near-stream activities. Therefore, likely effects to SONCC coho salmon critical habitat from suspended sediment are expected to be insignificantly small, because: Project activities causing significant ground disturbance (*i.e.*, commercial harvest operations, associated road and road/stream crossing work, and log hauling) will be located upstream and 300 feet or more away from SONCC coho salmon critical habitat (excepting water drafting, for which see Direct Effects to SONCC Coho Salmon Individuals above); Project commercial harvest units will be dispersed, while site-specific impacts will be small and restricted to the reach scale; and PDFs, BMPS, and WWOS (USFS 2002) will preclude or quickly arrest Project-related sediment mobilization before it can adversely affect SONCC coho salmon critical habitat downstream.

While sediment mobilization to streams from individual Project activities is expected to be small, localized, and disconnected from stream channels (excepting road/stream crossing work and water drafting), the cumulative effects from Project activities could, if coupled with major precipitation event(s), contribute to the risk of landslides and/or debris flows. To avoid exacerbating landslide occurrence, no ground-based commercial harvest will occur on active landslides or toe zones of dormant landslides (BMP 1.6). All ground-based commercial harvest units will be located in upslope positions at least 300 feet away from any SONCC coho salmon

critical habitat. Field review by the USFS geologist determined that the commercial harvest units are generally small in size and showed no indication of movement, and no new roads are to be constructed during the Project.

Poor drainage on Project roads and landings can concentrate water on hillslopes, which can exacerbate existing unstable lands or create new landslides. The cessation of road use, including temporary roads, per WWOS (USFS 2002, USFS 2017) will minimize any rutting or furrowing that can concentrate water on road surfaces and adjacent hillslopes. PDFs require the hydrologic stabilization of the one mile of temporary road, which includes control of drainage on roadbeds. PDF WS-19 requires new landings to be configured for long-term drainage, to establish natural runoff patterns. While these standards and PDFs minimize the effects to landslide risk, they do not eliminate them. Hydrologic stabilization, which includes removal of culverts and fills at stream crossings, out-sloping of road surfaces, obliteration of temporary road segments, and erosion and sedimentation control structures will be maintained and repaired on all roads and landings used in the Project, per guidance in the Forest Service Handbook 2409.15 R5 Supplement. This stabilization work will ensure that any effects caused by Project roads and landing work remain localized, small, and will be contained by mechanized equipment exclusion zones and RR buffers protecting stream channels.

#### *4) Decreased Large Woody Debris*

The only action that could have any impact on large wood in RRs is hazard tree removal where roads intersect RRs. Hazard trees will be identified, felled, and removed as needed for safety, in compliance with Region 5 Hazard Tree Guidelines (USFS 2012). Hazard trees will be retained on site when they are located downslope of a road in a position from which, if felled, they would contact a fish-bearing stream. Hazard trees to be felled occur occasionally along roadways, and instances of potential felling of large numbers of trees adjacent to one another have not been indicated. This dispersed and limited felling, with removal of felled trees only where they are deemed a continuing hazard, may result in small, localized decreases in large wood recruitment to waterways. However, given Project hazard tree removal restrictions in RRs, the Project will have no more than an insignificant effect on large woody debris recruitment to Project streams, including SONCC coho salmon critical habitat.

### **Summary of Effects to Critical Habitat**

There are expected to be insignificant small, localized, short-term road/stream crossing treatment-related effects to aquatic habitat in portions of streams well upslope from SONCC coho salmon critical habitat, since intervening RR habitat is expected to intercept, detain, and disperse any mobilized sediment. These isolated and quickly attenuating effects are expected to have even smaller impacts on downstream SONCC coho salmon juvenile summer and winter rearing areas, juvenile migration corridors, growth and development areas, adult migration corridors, and spawning areas.

Potential effects from Project commercial harvest activities will be minimized by: 1) minimizing Project activities and associated impacts in RRs; 2) including Project resource protection measures that have a demonstrated record of avoiding or reducing potential impacts to aquatic



habitat; and 3) removing some heavy understory fuels and then planting, which will allow for quicker development of late seral forests while allowing for future fire management, including fire use, to help achieve fire-resilient forests on the landscape. Fuels treatment, site preparation, and planting will accelerate establishment of root structures that help stabilize soil.

Legacy site treatment at 53 sites include the following: culvert upgrades at road-stream crossings to pass 100-year flows; fill reduction at road-stream crossings to withstand 100-year peak flows and debris flows; dip construction at stream crossings to eliminate diversion potential; rolling dip and waterbar construction to reduce concentration of overland run-off; road surface outsloping and elimination of inboard ditch or outside berms; road grading and application of rock aggregate, and landslide stabilization that may include retaining wall construction. These treatments are designed to minimize sediment from being delivered downslope/downstream to Canyon Creek, Kelsey Creek, and the Scott River. Legacy site treatment will occur in coordination with the North Coast Water Quality Control Board, as funding and staff resources become available.

## **Conclusion**

Based on this analysis, NMFS concurs with the USFS that the Project may affect, but is not likely to adversely affect SONCC Coho salmon ESU and its designated critical habitat.

## **Reinitiation of Consultation**

Reinitiation of consultation is required and shall be requested by the USFS or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Please direct questions regarding this letter to Donald Flickinger, NMFS WCR Yreka, California office at (530) 841-4414, or via email at [donald.flickinger@noaa.gov](mailto:donald.flickinger@noaa.gov).

Sincerely,

Barry Thom  
Regional Administrator

cc: Bobbie DiMonte Miller, USFS, Yreka, CA  
AR#: 151422WCR2017AR00086

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## Code of Federal Regulations Cited

- 50 CFR 402. Interagency Cooperation—Endangered Species Act of 1973, as Amended.
- 50 CFR 402.02. Interagency Cooperation, Definitions—Endangered Species Act of 1973, as Amended.

50 CFR 402.16. Reinitiation of Formal Consultation—Endangered Species Act of 1973, as Amended.

50 CFR 600. 920. Federal agency consultation with the Secretary—Magnuson-Stevens Fishery Conservation and Management Act.